

3100 & LPZ Series Side Mount Drive Package for Light & Standard Load 60 Hz Gearmotors




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Warnings – General Safety


	WARNING	
<p>The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.</p>		


	WARNING
<p>Gearmotors may be HOT. DO NOT TOUCH Gearmotors.</p>	

	DANGER
<p>Climbing, sitting, walking or riding on conveyor will cause severe injury. KEEP OFF CONVEYORS.</p>	

	WARNING
<p>Exposed moving parts can cause severe injury. REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.</p>	

	DANGER
<p>Do NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.</p>	

	WARNING
<p>Dorner cannot control the physical installation and application of conveyors. Taking protective measures is the responsibility of the user.</p> <p>When conveyors are used in conjunction with other equipment or as part of a multiple conveyor system, CHECK FOR POTENTIAL PINCH POINTS and other mechanical hazards before system start-up.</p>	

	WARNING
<p>Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.</p>	

Introduction

IMPORTANT: Some illustrations may show guards removed. Do NOT operate equipment without guards.

Upon receipt of shipment:


- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage.
- Accessories may be shipped loose. See accessory instructions for installation.

Dorner 3100 Series conveyors are covered by patent numbers 5156260, 5156261, 5203447, 5265714 and applications in other countries.

Dorner LPZ Series conveyors are covered by patent numbers 5156260, 5156261, 5203447, 5265714, 5875883 and applications in other countries.

Dorner's Limited Warranty applies.

Dorner reserves the right to make changes at any time without notice or obligation.

Dorner has convenient, pre-configured kits of Key Service Parts for all conveyor products. These time saving kits are easy to order, designed for fast installation, and guarantee you will have what you need when you need it. Key Parts and Kits are marked in the Service Parts section of this manual with the Performance Parts Kits logo .

Product Description

Refer to Figure 1 for typical components.

Typical Components	
A	Conveyor
B	Mounting Bracket
C	Gearmotor
D	Coupling
E	Coupling Guard

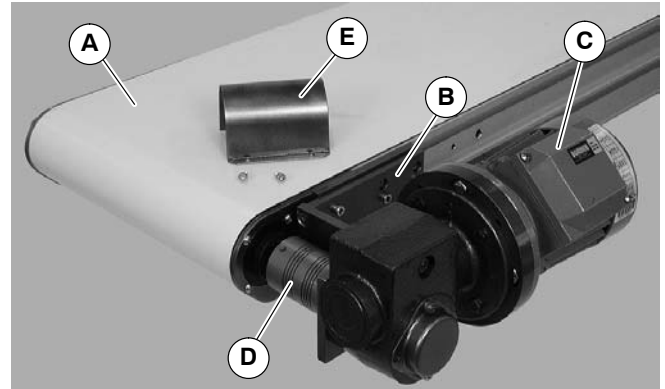


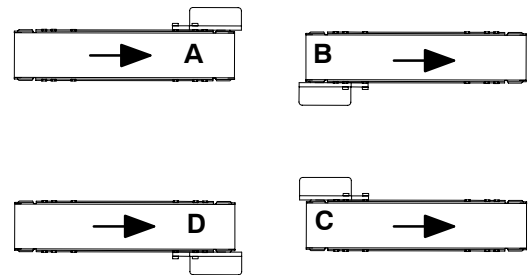
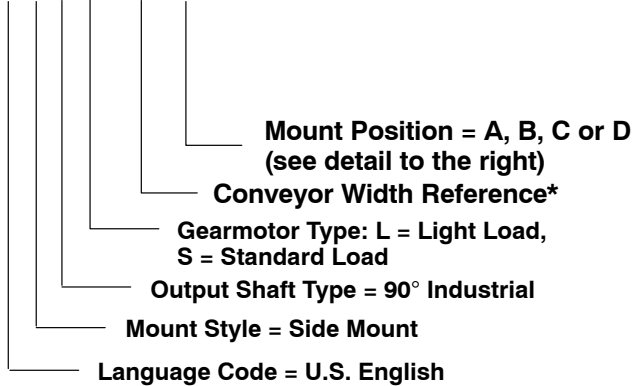
Figure 1

Specifications

Gearmotor Mounting Package Models:

Example:

3 M S H L WW A



* See "Ordering and Specifications" Catalog for details.

Table 1: Gearmotor Specifications

Item	Light Load Gearmotor			Standard Load Gearmotor			
	I Phase	III Phase	DC Variable Speed	I Phase	III Phase	VFD Variable Speed	DC Variable Speed
Output Power	0.25 hp (0.19 kw)			0.5 hp (0.37 kw)			
Input Voltage	115VAC	208 – 230/460 VAC	130VDC	115VAC	208 – 230/460 VAC	230 VAC	90VDC
Input Frequency	60Hz		25 – 63Hz	60Hz		25 – 63Hz	N/A
Input Current (Amperes)	5.0	1.2/0.6	2.2	7.4	2.1 – 2/1	1.6	5.0
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1			5:1, 10:1, 20:1, 40:1, 60:1			
Frame Size	NEMA 42CZ			NEMA 56C			
Motor Type	Totally enclosed, Fan cooled			Totally enclosed, Fan cooled			

Specifications

Table 2: Belt Speeds for Fixed Speed 90° 60 Hz Gearmotors

Light Load Gearmotors				Standard Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060HL4(vp)FN	29	226	25.5	32M060HS4(vp)FN	29	226	25.5	23	7.0
32M040HL4(vp)FN	43	237	26.8	32M040HS4(vp)FN	43	247	27.9	34	10.4
32M020HL4(vp)FN	86	142	16	32M020HS4(vp)FN	86	248	27.9	69	21.0
32M010HL4(vp)FN	173	78	18.8	32M010HS4(vp)FN	173	156	17.6	137	41.8
N/A	N/A	N/A	N/A	32M005HS4(vp)FN	345	81	9.1	275	83.8

(vp) = voltage and phase

21 = 115 V, 1-phase

23 = 208– 230/460 V, 3-phase

Table 3: Belt Speeds for Variable Speed 90° DC Gearmotors

Light Load Gearmotors				Standard Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
62Z060HS423EN	42	198	22.4	32M060HSD9DEN	42	198	22.4	4.0 – 33	1.2 – 10
62Z040HS423EN	63	163	18.4	32M040HSD9DEN	63	215	24.3	6.0 – 50	1.8 – 15
62Z020HS423EN	125	98	11.1	32M020HSD9DEN	125	196	22.1	12 – 100	3.6 – 30
62Z010HS423EN	250	54	6.1	32M010HSD9DEN	250	108	12.2	24 – 200	7.3 – 61

Table 4: Belt Speeds for Variable Speed 90° VFD Gearmotors

Standard Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060HLD3DEN	29	226	25.5	2.3 – 23	0.7 – 7.8
32M040HLD3DEN	43	247	27.9	3.4 – 34	1.0 – 10.5
32M020HLD3DEN	86	248	27.9	6.9 – 69	2.1 – 21
32M010HLD3DEN	173	156	17.6	13 – 137	4.2 – 42
32M005HLD3DEN	345	81	9.1	27 – 275	8.4 – 84

NOTE: For belt speed other than those listed, contact factory for details.

Required Tools

- Hex key wrenches:
2.5 mm, 3 mm, 5 mm
- Torque wrench

Mounting



Installation Component List	
F	Drive Assembly
G	Mounting Screws (6x)
H	Key

1. Typical components (Figure 2)

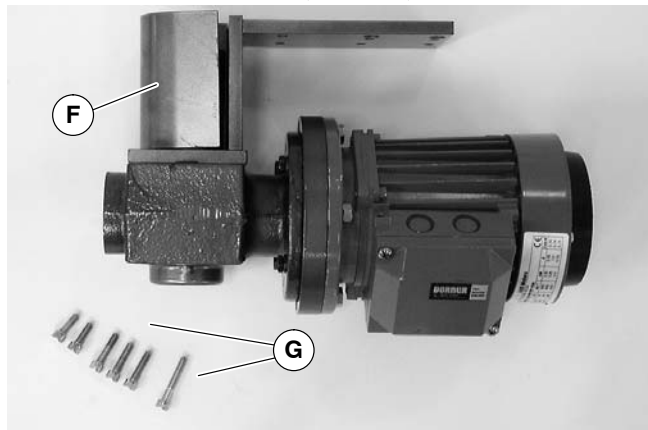


Figure 2

NOTE: Gearmotor may be operated in positions 1, 2, 3 or 4 (Figure 3).

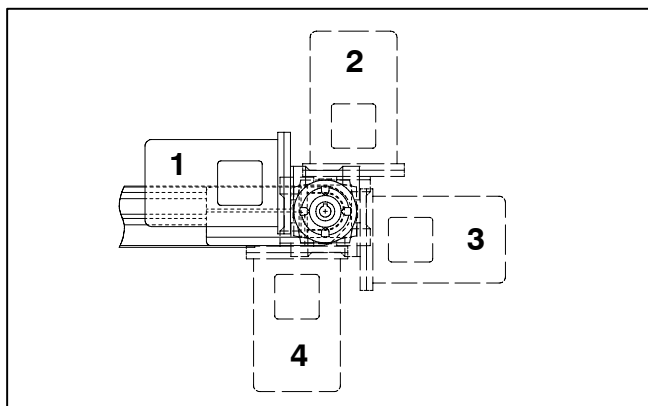


Figure 3



2. Locate drive output shaft. Remove screws (I of Figure 4). Install key (H).

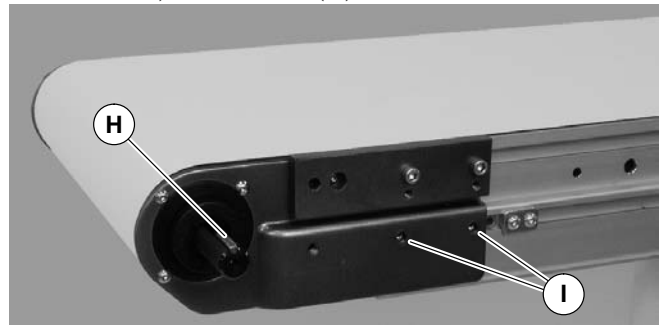


Figure 4

3. Remove screws (J of Figure 5) and coupling guard (E).



Figure 5

Installation

4. If required, change gearmotor position by removing screws (K of Figure 6). Rotate gearmotor to other position (Figure 3) and replace screws (K). Tighten to 110 in-lb (12 Nm).

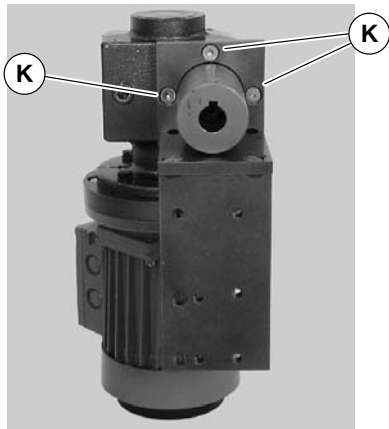


Figure 6

5. Install coupling (D of Figure 7) onto drive output shaft. Attach drive assembly to conveyor with mounting screws (G). Install medium length screws on bottom, long screw upper left, short screws upper right. Tighten screws to 110 in-lb (12 Nm).

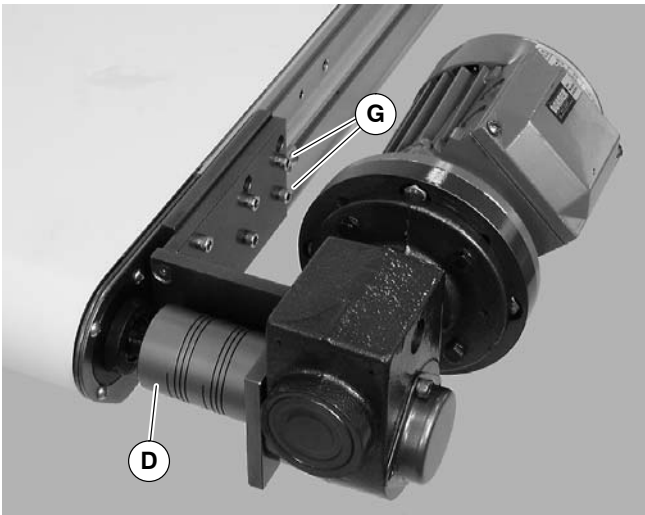


Figure 7

	 WARNING
	<p>Exposed moving parts can cause severe injury.</p> <p>KEEP HANDS CLEAR OF DRIVE WHILE JOGGING MOTOR.</p>

6. Jog motor and rotate coupling to gain access to set screw (L of Figure 8). Tighten to 33 in-lb (3.7 Nm). Repeat for second set screw.

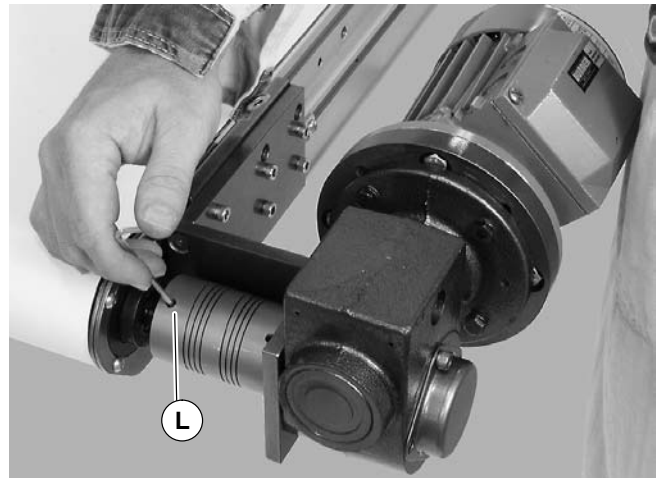


Figure 8

7. Reinstall coupling guard (E of Figure 9) with screws (J).

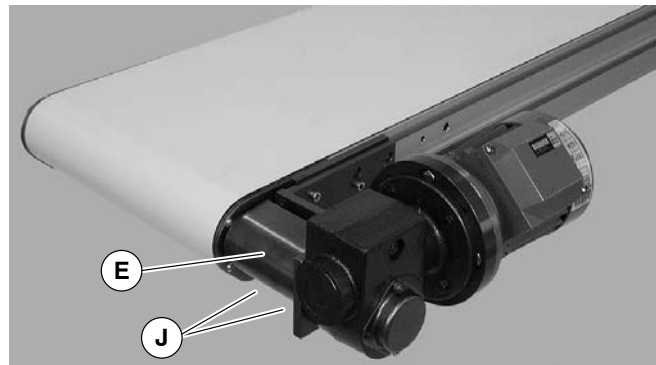


Figure 9

Preventive Maintenance and Adjustment

Required Tools

- Hex key wrenches:
2.5 mm, 3 mm, 5 mm
- Adjustable wrench (for hexagon head screws)
- Torque wrench

Gear Reducer Replacement



NOTE: The gear reducer and output shaft are permanently fixed with Loctite® Adhesive. Both components must be replaced. See “Service Parts” Section for part numbers.

1. Remove screws (J of Figure 9) and coupling guard (E).



2. Jog motor and rotate coupling to gain access to set screw (L of Figure 8). Loosen set screw. Repeat for second set screw.
3. Remove mounting screws (G of Figure 7) and remove drive assembly.

4. Remove two (2) set screws (L of Figure 10) and remove coupling (D).

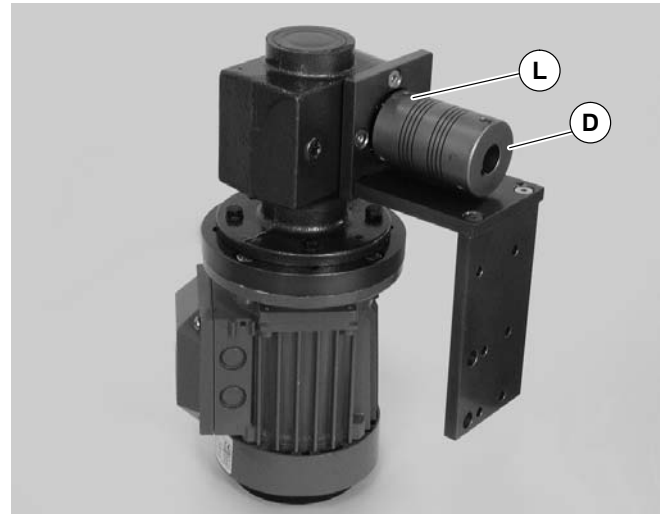


Figure 10

5. Remove three (3) screws (K of Figure 11) and remove mounting bracket (B).

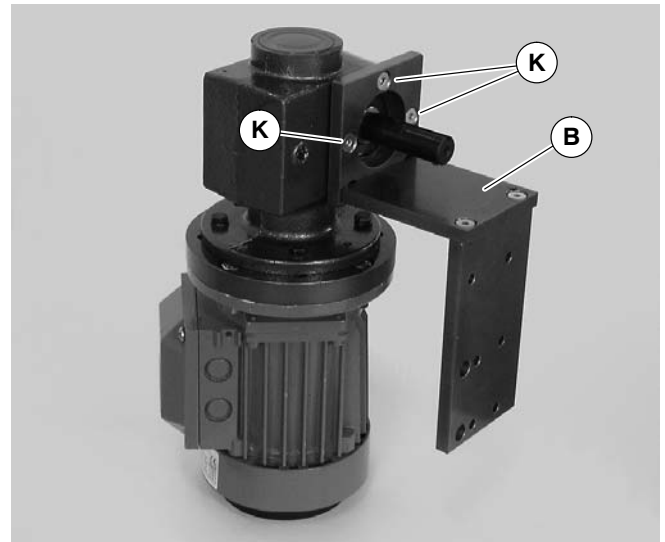


Figure 11

Preventive Maintenance and Adjustment

6. Remove four screws (M of Figure 12). Detach motor (N) from gear reducer (O). Retain motor output shaft key (P).

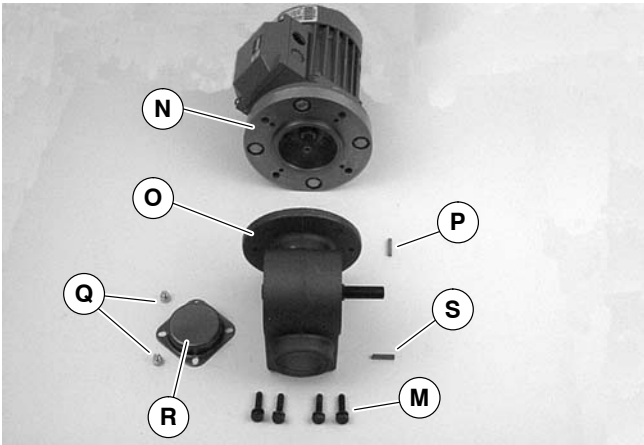


Figure 12

7. Remove two (2) screws (Q) and detach output shaft cover (R).
8. Remove gear reducer output shaft key (S).
9. Apply Loctite® 680 Adhesive (W of Figure 13) to new shaft.

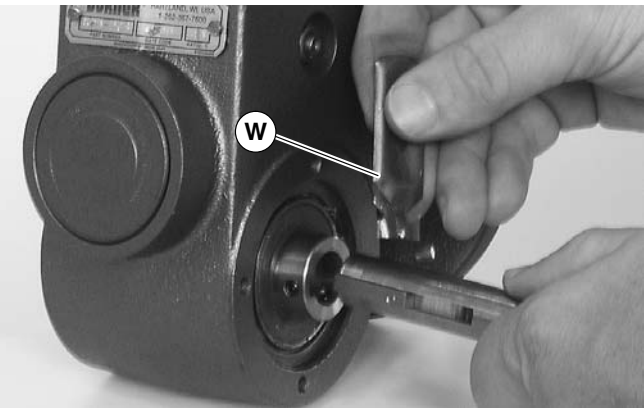


Figure 13

10. Insert the new shaft with adhesive (U Figure 14) and key (V) into new gear reducer. Tighten set screws to 33 in-lb (3.7 Nm).

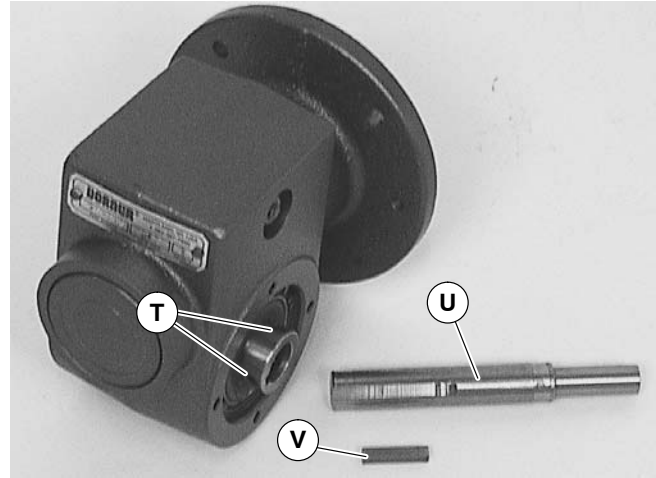


Figure 14

NOTE: Allow Loctite® Adhesive to cure for one (1) hour prior to starting conveyor.


IMPORTANT: Be extremely careful when coupling motor to gear reducer. Avoid misalignment and forcing the connection causing possible permanent gear reducer seal damage.

11. With key (P of Figure 12) in keyway, slide motor (N) and gear reducer (O) together. Install screws (M) and tighten.
12. Attach mounting bracket (B of Figure 11) to gearmotor with screws (K). Tighten screws to 110 in-lb (12 Nm).
13. Attach coupling (D of Figure 10) to gear reducer shaft. Tighten two (2) set screws (L) to 33 in-lb (3.7 Nm).
14. Complete steps 2 through 7 of “Installation” section beginning on page 5.

Preventive Maintenance and Adjustment

Motor Replacement

	WARNING Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.
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	DANGER Hazardous voltage will cause severe injury or death. LOCK OUT POWER BEFORE WIRING.
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1. For single phase motor, unplug power cord from outlet
2. For three phase and VFD variable speed motor:
 - a. Loosen terminal box screws (X of Figure 15) and remove cover (Y).

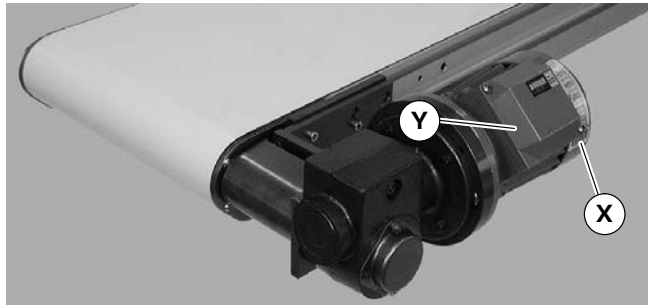


Figure 15

- b. Record wire colors on terminals 1, 2 and 3. Loosen wire nuts and remove wires 1, 2 and 3.
 - c. Loosen cord grip and remove cord.
3. For DC variable speed motor, unplug motor cord at disconnect (Z of Figure 16).

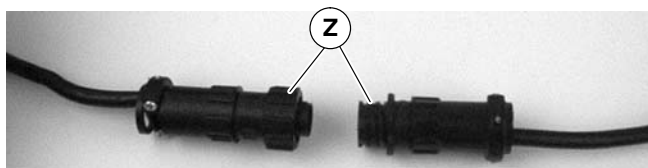


Figure 16

4. Remove four (4) screws (AA of Figure 17). Detach motor (AB) from gear reducer (AC). Retain motor output shaft key (AD).

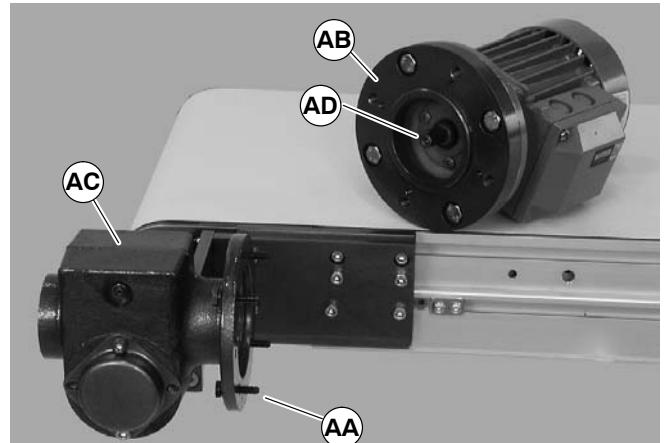


Figure 17

IMPORTANT: Be extremely careful when coupling motor to gear reducer. Avoid misalignment and forcing the connection causing possible permanent gear reducer seal damage.

5. With key (AD of Figure 18) in keyway, slide motor (AB) and gear reducer together. Install screws (AA) and tighten.

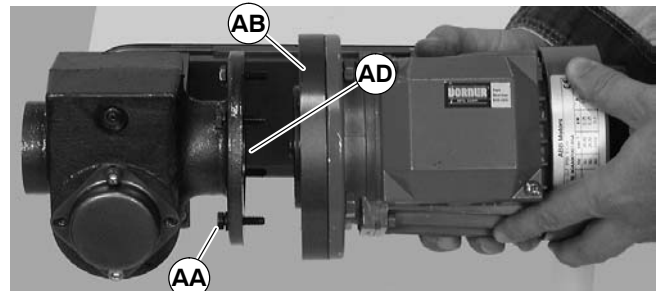


Figure 18

6. Replace wiring:
 - For a single phase motor, reverse step 1 on this page.
 - For a three phase or VFD variable speed motor, reverse step 2 on this page.
 - For a DC variable speed motor, reverse step 3 on this page.

Service Parts

NOTE: For replacement parts other than those shown on this page, contact an authorized Dorner Service Center or the factory. Key Service Parts and Kits are identified by the Performance Parts Kits logo. Dorner recommends keeping these parts on hand.

Item	Part No.	Part Description
1	62MS411FN	Motor, 0.25hp (0.19Kw), 115/230 Volts, 60 Hz, 1-Phase
	62MS411FR	Motor, 0.25hp (0.19Kw), 115/230 Volts, 60 Hz, 1-Phase with Reversing
	62MS423	Motor, 0.25hp (0.19Kw), 208-230/460 Volts, 60 Hz, 3-Phase
	62MSD3DEN	Motor, 0.25hp (0.19Kw), 130 VDC
	62MH411FN	Motor, 0.5hp (0.37Kw), 115/230 Volts, 60Hz, 1-Phase
	62MH423	Motor, 0.5hp (0.37Kw) 208-230/460 Volts, 60Hz, 3 Phase
	62MHD9DEN	Motor, 0.5hp (0.37Kw), 90VDC
	32MS423EN	Motor, 0.5hp (0.37Kw), 230 Volts, 3 Phase Inverter Duty
2	32M005HL	Gear Reducer, 5:1, NEMA 42CZ
	32M010HL	Gear Reducer, 10:1, NEMA 42CZ
	32M020HL	Gear Reducer, 20:1, NEMA 42CZ
	32M040HL	Gear Reducer, 40:1, NEMA 42CZ
	32M060HL	Gear Reducer, 60:1, NEMA 42CZ
	32M005HS	Gear Reducer, 5:1, NEMA 56C
	32M010HS	Gear Reducer, 10:1, NEMA 56C
	32M020HS	Gear Reducer, 20, NEMA 56C
	32M040HS	Gear Reducer, 40, NEMA 56C
32M060HS	Gear Reducer, 60, NEMA 56C	
3	807-584	Coupling
4	300599	Gear Reducer Shaft
5	912-084	Key, Square, 0.188" x 1.5" L
6	980018M	Key, Square, 6mm x 18mm L (2x)

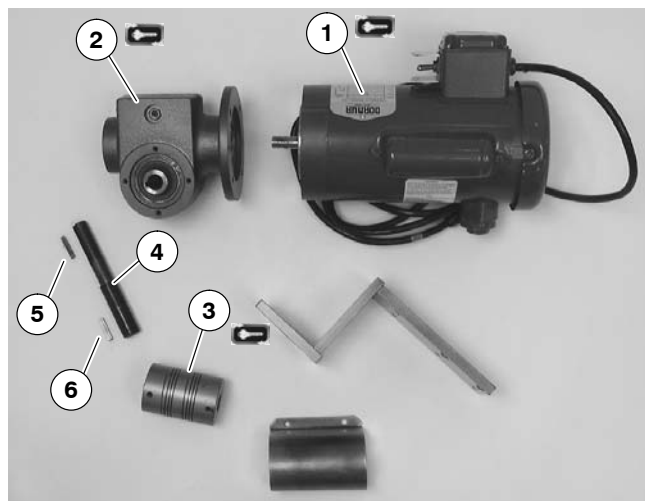


Figure 19

Return Policy

No returns will be accepted without prior written factory authorization. When calling for authorization, please have the following information ready for the Dorner Factory representative or your local distributor:

1. Name and address of customer.
2. Item(s) being returned.
3. Reason for return.
4. Customer's original order number used when ordering the item(s).
5. Dorner or distributor invoice number.

A representative will discuss action to be taken on the Returned items and provide a Returned Goods Authorization Number to reference.

There will be a 15% restocking charge on all new items returned for credit where Dorner was not at fault. These will not be accepted after 60 days from original invoice date. The restocking charge covers inspection, cleaning, disassembly, and reissuing to inventory.

If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

Dorner has representatives throughout the world. Feel free to contact Dorner for the name of your local representative. Our technical sales and service staff will gladly help with your questions on Dorner products.

For a copy of Dorner's Limited Warranty, contact factory, distributor, service center or visit our website at www.dorner.com

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